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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,479	06/26/2003	Lawrence S. Young	HARR0032-101	5440

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EXAMINER	
PRIEBE, SCOTT DAVID	
ART UNIT	**PAPER NUMBER**
1633	

DATE MAILED: 07/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/607,479	YOUNG ET AL.	
	Examiner	Art Unit	
	Scott D. Priebe, Ph.D.	1633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-31 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-31 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 26 June 2003 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/798,128.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 20040520.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 120 as follows:

An application in which the benefits of an earlier application are desired must contain a specific reference to the prior application(s) in the first sentence(s) of the specification or in an application data sheet by identifying the prior application by application number (37 CFR 1.78(a)(2) and (a)(5)). If the prior application is a non-provisional application, the specific reference must also include the relationship (i.e., continuation, divisional, or continuation-in-part) between the applications except when the reference is to a prior application of a CPA assigned the same application number.

The first sentence of the specification (line 11) should be amended to indicate that the application is a continuation of --U.S. application 09/798,128 filed March 2, 2001, now U.S. Pat. No. 6,608,037--.

Specification

The disclosure is objected to because of the following informalities. The specification does not comply with 37 CFR 1.821(d), which requires that nucleotide or amino acid sequences disclosed in the specification, claims or drawings must be identified by their assigned SEQ ID NO where the sequence is recited. For sequences disclosed in the drawings, the assigned SEQ ID NO may be identified either in the "Brief Description" of the drawing (preferred) or in the

drawing itself. Figures 1c, 6c, 9c(i), 9c(ii) and 10c each disclose nucleotide sequences that have not been identified by their assigned SEQ ID NO.

Appropriate correction is required.

Claim Objections

Claims 4 and 29-31 are objected to because of the following informalities.

Claims 4 and 29-31 recite "expressible gene is selected from the group consisting of: a gene encoding a toxin, a prodrug-activating enzyme or an immunomodulatory agent," which is improper format for a Markush claim. Claims 29-31 recite "immunomodulatory element" in the phrase; "element" should be --agent--, which is the term used in the specification. The phase should be replaced with --expressible gene is a gene encoding a toxin, a prodrug-activating enzyme or an immunomodulatory agent--.

In claim 4, at line 4, "suppressor" should be --suppressor--.

Appropriate correction is required.

Claims 20-22, 24, 25, 27, and 28 are objected to because a dependent claim may depend only from a preceding claim. These claims improperly depend form claims 29-31.

Appropriate correction is not required in response to this Office action, but if not corrected beforehand, will require reordering the claims before the application is allowed.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 2, and 4-31 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for making and using constructs comprising an expressible gene that is useful for treatment of cancer that is characterized by deregulation of the Wnt signaling pathway or the presence of TCF/β-catenin heterodimers, and for methods of treating cancer associated with deregulation of the Wnt signaling pathway or the presence of TCF/β-catenin heterodimers does not reasonably provide enablement for making and using constructs with expressible genes useful for treatment of diseases or methods of treating diseases other than cancer characterized by deregulation of the Wnt signaling pathway or the presence of TCF/β-catenin heterodimers. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

The claims are directed to a nucleic acid construct comprising a broadly recited expressible gene useful for treating a generic disease characterized by deregulation of the Wnt signaling pathway or the presence of TCF/β-catenin heterodimers in diseased cells. The product claims are limited to the specific recited use of the vector in treatment of a class of disease. By broadly reciting any "disease", the claims embrace genes that would be suitable for treating any disease or condition by gene therapy, not just for treating cancer. The specification must teach

those of skill in the art how to make and how to use the invention as broadly as it is claimed. *In re Goodman*, 29 USPQ2d at 2013 (CAFC 1994), citing *In re Vaeck*, 20 USPQ2d at 1445 (CAFC 1991), and the scope of claims must bear a reasonable correlation to scope of enablement provided by specification to persons of ordinary skill in the art. *In re Fisher,* 166 USPQ 18 (CCPA 1970). The instant claims exceed the breadth of the supporting disclosure.

As disclosed on page 3 (lines 11-14), the goal of the invention is to provide for an effective treatment of cancer associated with deregulation of the Wnt signaling pathway. This goal is reiterated at page 13, lines 11-25. On page 4 (lines 17-29), the specification discloses that expression of the "therapeutic gene is *only* induced when TCF/β catenin heterodimers are present and capable of activating transcription," and that cells which become cancerous due to deregulation of the WNT signaling pathway have the TCF/β catenin heterodimers required for expression of the claimed constructs. The specification discloses that the expression of the nucleic acid construct is highly selective and is not expressed above background when TCF/β catenin heterodimers are absent in a transfected cell. These teachings are supported by the working examples.

However, the claims are directed to treating any disease characterized by deregulation of the WNT signaling pathway or the presence of TCF/β catenin heterodimers, and claims 1, 2, 7-28 are directed to nucleic acid constructs comprising an expressible gene for treating any disease characterized by deregulation of the WNT signaling pathway or the presence of TCF/β catenin heterodimers, which could include genes that would have no use in the treatment of cancer, e.g. genes used in supplemental gene therapy encoding products such as CFTR, coagulation factors, lipoprotein lipase, apolipoproteins, etc. Neither the specification nor the prior art of record

teaches how to use such genes in the treatment of cancer. Neither the specification nor the prior art of record identifies a disease characterized by deregulation of the WNT signaling pathway or the presence of TCF/β catenin heterodimers other than certain types of cancer.

The specification provides no guidance or working examples on using the claimed nucleic acid constructs for treating any disease other than cancer, such as cystic fibrosis, hemophilia, hyperlipidemia, *inter alia*, and no guidance on using genes other than a gene encoding a toxin, a gene encoding a prodrug activating enzyme, a gene encoding a immunomodulatory agent, a tumor suppressor gene or an apoptotic gene for treating cancer. It would require further experimentation with inventive activity on the part of one of skill in the art to practice the invention as broadly claimed.

Therefore, it would require undue experimentation by one of skill in the art to practice the invention as broadly claimed because of the lack of guidance or working examples on using the invention for any purpose other than treating cancers associated with deregulation of the WNT signaling pathway or the presence of TCF/β catenin heterodimers or for making constructs with genes useful for treating such other diseases.

Claims 7, 15, 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites the limitation " the SV40 promoter, the EIB promoter, and the c-Fos promoter" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

There is not just a single SV40 promoter, E1B promoter, and c-Fos promoter. The phrase should be replaced with --an SV40 promoter, an E1B promoter, and a c-Fos promoter--.

Claim 15 recites the limitation "the TATA box" in line 8. There is insufficient antecedent basis for this limitation in the claim. Not all promoters comprise a TATA box. This part of rejection would be overcome by insertion of --comprising a TATA box-- after "promoter" in line 3.

Claim 20 recites the limitation "the TCF binding element" in line 2. There is insufficient antecedent basis for this limitation in the claim. Claims 9 and 12 comprise multiple TCF binding elements and it is unclear whether the limitation of claim 20 applies to all or the elements or just to one. This part of rejection would be overcome by replacing "has" (line 2) with --or elements have--.

Double Patenting

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claim 3 is rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 1 of prior U.S. Patent No. 6,608,037. This is a double patenting rejection.

Claim 3 differs from claim 1 of the '037 patent by limiting the cancer to be treated to one characterized by the presence of TCF/β-catenin heterodimers in the cancer cells rather than by deregulation of Wnt pathway signaling. However, these two characteristics of cancer cells are two aspects of the same defect. As disclosed in the specification, deregulation of Wnt signaling, often due to mutation of the APC gene, results in an aberrant excess of TCF/β-catenin heterodimers. There is no evidence of record to suggest that there is a cancer characterized by one but not the other of these characteristics. Thus, the cancers that are to be treated with the claimed construct are the same cancers that are to be treated with the construct of the patent.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

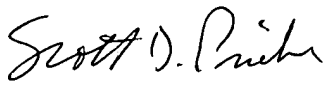
Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-31 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-29 of U.S. Patent No. 6,608,037. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims embrace the subject matter of the patented claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott D. Priebe, Ph.D. whose telephone number is (571) 272-0733. The examiner can normally be reached on M-F, 8:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Nguyen can be reached on (571) 272-0731. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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Primary Examiner
Art Unit 1633